



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,790	10/29/2001	Thomas A. Darnell	32166	7345
23589	7590	10/10/2003		
HOVEY WILLIAMS LLP 2405 GRAND BLVD., SUITE 400 KANSAS CITY, MO 64108				
EXAMINER: BELLINGER, JASON R				
ART UNIT		PAPER NUMBER		
3617				

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/029,790

Applicant(s)

DARNELL, THOMAS A

Examiner

Jason R Bellinger

Art Unit

3617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the amendment filed 15 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-35 and 37-48 is/are rejected.
- 7) ☒ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 15 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Allowable Subject Matter

1. The indicated allowability of claims 9-48 is withdrawn in view of the newly discovered reference(s) to Imamura, Lipper, Rooney, Kachler, Ridha, Mason, Weld, and Woelfel et al; all cited in the IDS filed 21 August 2003 and having been used to reject the aforementioned claims in PCT/US01/49449 of this application.

Rejections based on the newly cited references follow.

Drawings

2. The proposed drawing corrections were received on 15 July 2003. These drawings are approved.

Specification

3. The use of the trademark Kevlar has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 15, 24-28, 35, 38-39, and 45-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 15 and 35 are indefinite due to the fact that both include reference to the Term Kevlar, which is a trademark. The term should be capitalized wherever it appears and be accompanied by the generic terminology.
7. Claim 45 recites the limitation "the wheel half" in line 4. There is insufficient antecedent basis for this limitation in the claim.
8. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "plug" the phrase "mud plug" in claims 24-26, 38-39, and 45-48 is used by the claim to mean "cover", while the accepted meaning is "a small core or segment removed from a larger object and used to fill a hole (i.e. a stopper)." The term is indefinite because the specification does not clearly redefine the term.

It is suggested that the term "plug" be replaced with the term --cover-- for more clearly define the invention.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 9-12, 16, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Imamura. In Figures 2 & 3, Imamura shows a modular wheel having an inboard wheel half 20a, an outboard half 40a, and a center section 51a interposed between and separably coupled with the inboard and outboard wheel halves (20a and 40a, respectively). A first bead lock ring 47a has a first bead lock surface, and the wheel further has a second bead lock surface 41a, such that the two bead lock surfaces act to seal a tire bead therebetween.

The inboard wheel half 20a includes a plurality of stiffening ribs 24a, and includes a circumferential raised rib 27a operable to facilitate retaining a tire on the wheel. The outboard wheel half 40a includes a plurality of stiffening ribs 44a.

While Imamura does not specifically set forth the type of light alloy that forms the portions of the wheel, such as the center section 51a, it is inherently known that aluminum is a light alloy. The circumferential raised rib 27a acts as a second bead lock ring with a third bead lock surface, and the wheel has a fourth bead lock surface 21a, such that the two bead lock surface act to seal a second tire bead therebetween.

11. Claims 9, 16, 22, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Lipper. Lipper shows a modular wheel having an inboard wheel half 12, an outboard half 14, and a center section 12a interposed between and separably coupled with the inboard and outboard wheel halves (12 and 14, respectively). A first bead lock ring 18 has a first bead lock surface 18a, and the wheel further has a second bead lock surface 14a, such that the two bead lock surfaces act to seal a tire bead therebetween.

The center portion 12a is formed from aluminum (see column 3, lines 39-41). The first bead lock surface 18a presents a first portion of an alignment mechanism, while the second bead lock surface 14a presents a second portion of the alignment mechanism. Both alignment mechanisms cooperate to align a first bolthole 30 in the first bead lock surface 18a with a second bolthole 28 in the second bead lock surface 14a.

12. Claims 29, 31, 33-34, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Rooney. Rooney shows a wheel having an inboard portion and an outboard portion. A first bead lock ring has a first bead lock surface, and the wheel further has a second bead lock surface, such that the two bead lock surfaces act to seal a tire bead therebetween. The inboard wheel portion has an exterior surface with a circumferential raised rib, which facilitates the retention of a tire on the wheel.

The wheel body is substantially formed of a polymer, specifically reinforced (toughened) nylon (see column 4, lines 38-40). A second bead lock ring has a third bead lock surface, and the wheel has a fourth bead lock surface, such that the two bead lock surfaces act to seal a second tire bead therebetween.

13. Claims 45-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Kachler. Kachler shows a wheel having an outboard cavity through which access is available to a mechanism for removably coupling the wheel to a vehicle. A mud "plug" 24 is secured to the wheel using a quick release fastener 32, for preventing the entry of mud and debris into the outboard cavity of the wheel. The mud "plug" 24 includes a mounting tab 26 removably secured to the wheel, with a mud shield 48 removably secured to the mounting tab 26. The quick release fastener 32 is a quarter-turn fastener.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 13-15, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura in view of Koyama et al. Imamura contains all of the limitations as set forth in paragraph 10 above, but does not set forth a wheel formed from a reinforced polymer.

Koyama et al teaches the use of a wheel comprised of a reinforced polymer with up to approximately 50% fiber reinforcement (see column 4, lines 52-55). The wheel may be formed from nylon (see column 5, lines 62-68 to column 6, lines 1-8), while the

reinforcing fibers are glass fibers or carbon fibers (see column 4, lines 37-41).

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to produce the wheel of Imamura of a fiber reinforced plastic wheel for the purpose of providing a wheel having superior corrosion resistance and light weight compared to a metal wheel, and yet retain the same (or better) strength and wear resistance as a metal wheel.

Imamura as modified by Koyama et al shows a wheel having a center section 51a constructed from a polymer, and further having a compression limiting insert 30a.

16. Claims 13-15, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipper in view of Ridha. Lipper contains all of the limitations as set forth in paragraph 11 above, but does not set forth a wheel formed from a reinforced polymer.

Ridha teaches the use of a wheel comprised of a reinforced polymer with up to approximately 50% fiber reinforcement (see column 3, lines 9-12). The wheel may be formed from nylon (see column 3, lines 1-4), while the reinforcing fibers are glass fibers.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to produce the wheel of Lipper of a fiber reinforced plastic wheel for the purpose of providing a wheel having superior corrosion resistance and light weight compared to a metal wheel, and yet retain the same (or better) strength and wear resistance as a metal wheel.

Lipper as modified by Ridha shows a wheel having a center section 12a

constructed from a polymer, and further having a compression limiting insert 24.

17. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura. Imamura does not show the center section of the wheel being formed from magnesium.

Mason teaches the use of a multi-piece wheel having a section constructed from magnesium, while other sections of the wheel are formed from aluminum or steel.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to produce the wheel of Imamura with a center section constructed of magnesium for the purpose of providing a lightweight wheel, with corrosion resisting properties.

18. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipper in view of Mason. Lipper does not show the center section of the wheel being formed from magnesium.

Mason teaches the use of a multi-piece wheel having a section constructed from magnesium, while other sections of the wheel are formed from aluminum or steel.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to produce the wheel of Lipper with a center section constructed of magnesium for the purpose of providing a lightweight wheel, with corrosion resisting properties.

19. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura in view of Weld. Imamura does not show the center section having contact surfaces that correspond to each inboard and outboard wheel half, respectively, wherein each contact surface includes a groove for receiving a seal.

A best shown in Figure 3, Weld teaches the use of a multi-piece wheel having inboard and outboard wheel halves (2 & 3, respectively), and a center section 14 secured between the wheel halves. The center section 14 has contact surfaces, which contact each wheel half (2 & 3), and further includes grooves 40 for receiving an o-ring seal (41 & 42).

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to produce the center section of Imamura with a groove on each wheel half contact surface to receive a seal, for the purpose of preventing debris, moisture, etc. from entering between the different joined sections of the wheel, and thus preventing undue corrosion and failure of the wheel connection.

While Weld does not disclose the seal being a dynamic u-cup type seal, one of ordinary skill in the art that dynamic u-cup seals serve the same function as o-ring seals; and thus would be readily substituted for an o-ring seal as an equivalent part, dependent upon availability and cost.

20. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipper in view of Weld. Lipper does not show the center section having contact

surfaces that correspond to each inboard and outboard wheel half, respectively, wherein each contact surface includes a groove for receiving a seal.

A best shown in Figure 3, Weld teaches the use of a multi-piece wheel having inboard and outboard wheel halves (2 & 3, respectively), and a center section 14 secured between the wheel halves. The center section 14 has contact surfaces, which contact each wheel half (2 & 3), and further includes grooves 40 for receiving an o-ring seal (41 & 42).

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to produce the center section of Lipper with a groove on each wheel half contact surface to receive a seal, for the purpose of preventing debris, moisture, etc. from entering between the different joined sections of the wheel, and thus preventing undue corrosion and failure of the wheel connection.

While Weld does not disclose the seal being a dynamic u-cup type seal, one of ordinary skill in the art that dynamic u-cup seals serve the same function as o-ring seals; and thus would be readily substituted for an o-ring seal as an equivalent dependent upon availability and cost.

21. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura in view of Kachler. Imamura does not show a wheel having a mud "plug" positioned within the outboard wheel half, secured by a quick-release fastener, to prevent mud and debris from entering the wheel.

Kachler teaches the use of a mud "plug" 24 secured to an outboard wheel half of

a wheel by a quick-release fastener 32. The mud "plug" 24 prevents the entry of mud and other debris into the wheel.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the wheel of Imamura with a mud "plug" (or wheel cover) for the purpose of preventing debris, mud, etc. from entering the wheel.

22. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipper in view of Kachler. Lipper does not show a wheel having a mud plug positioned within the outboard wheel half, secured by a quick-release fastener, to prevent mud and debris from entering the wheel.

Kachler teaches the use of a mud plug 24 secured to an outboard wheel half of a wheel by a quick-release fastener 32. The mud plug 24 prevents the entry of mud and other debris into the wheel.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the wheel of Lipper with a mud plug (or wheel cover) for the purpose of preventing debris, mud, etc. from entering the wheel.

23. Claims 30, 32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rooney in view of Woelfel et al. Rooney contains all of the limitations as set forth in paragraph 12 above, but does not show the inboard and outboard wheel portions having stiffening ribs, nor the wheel being reinforced with up to 50% fibers.

Woelfel et al teaches the use of a wheel having a wheel body formed of a reinforced polymer with up to approximately 50% fiber reinforcement (see column 7, lines 55-68 to column 8 lines 1-16). The reinforcing fibers are glass fibers or carbon fibers (see column 2, lines 60-61). The wheel comprises a plurality of stiffening ribs 132 on both inboard and outboard halves.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the wheel of Rooney with glass or carbon fiber reinforcement consisting up to 50% of the polymeric material forming the wheel, and stiffening ribs on both the inboard and outboard wheel portions, for the purpose of increasing the strength and stability of the wheel.

24. Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rooney in view of Kachler. Rooney does not show a wheel having a mud plug positioned within the outboard wheel half, secured by a quick-release fastener, to prevent mud and debris from entering the wheel.

Kachler teaches the use of a mud plug 24 secured to an outboard wheel half of a wheel by a quick-release fastener 32. The mud plug 24 prevents the entry of mud and other debris into the wheel.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the wheel of Rooney with a mud plug (or wheel cover) for the purpose of preventing debris, mud, etc. from entering the wheel.

Allowable Subject Matter

25. Claims 26-28 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

26. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

27. Claim 48 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.


Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R Bellinger whose telephone number is 703-308-6298. The examiner can normally be reached on Mon - Thurs (9:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 703-308-0230. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Jason R Bellinger
Examiner
Art Unit 3617


jrb


S. JOSEPH MORANO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600